Notice of Allowability	Application No.	Applicant(s)	
	10/666,336	HOUSTON, THEODORE W.	
	Examiner	Art Unit	
	Dao H Nguyen	2818	

-- The MAILING DATE of this communication appears on the cov r sheet with the correspondenc address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *09/17/2003*.

2. ☒ The allowed claim(s) is/are *41-48*.

3. ☒ The drawings filed on *17 September 2003* are accepted by the Examiner.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 0903
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

David Nelms
Supervisory Patent Examiner
Technology Center 2800

DETAILED ACTION

1. In response to the communications dated 09/17/2003, claims 41-48 are active in this application as a result of the cancellation of claims 1-40 and 49-53.

Acknowledges

2. Receipt is acknowledged of the following items from the Applicant.

a. Information Disclosure Statement (IDS) filed on 09/17/2003 and made of record as Paper No. 0903. The references cited on the PTOL 1449 form have been considered.

b. Cancellation of claims 1-40 and 49-53 in the Preliminary Amendment filed 09/17/2003.

c. This Application is a Division of the Application No. 10/180,140 filed 06/26/2002, now Patent No. 6,710,391.

Reason for Allowance

3. The following is an examiner's statement of reason for allowance:

None of the references of record teaches or suggests the claimed method of forming a capacitor under bitline DRAM memory cell comprising (in addition to the other

limitations in the claim) depositing a second insulating layer over the capacitor dielectric layer, removing portions of the second insulating layer to expose an opening in the second insulating layer overlying the bit line contact pillar and to define a capacitor plate area associated with the trench; and depositing and planarizing a conductive material layer over the capacitor dielectric layer in the trench capacitor plate area and the bit line contact pillar, wherein the conductive material layer in the trench capacitor plate area is operable as a ground plate of the memory cell capacitor (claim 41).

None of the references of record teaches or suggests the claimed method of forming a capacitor under bitline DRAM memory cell comprising (in addition to the other limitations in the claim) depositing and planarizing a layer of conductive capacitor plate material over the capacitor dielectric layer in the trench defining a ground plate of the memory cell capacitor; depositing and planarizing a second insulating layer over the capacitor dielectric layer; removing portions of the second insulating layer to expose an opening in the second insulating layer overlying the bit line contact pillar and an opening overlying a portion of the capacitor plate material used as the ground plate; and depositing and planarizing a conductive material layer through the openings in the second insulating layer for contact to the bit line contact pillar and a portion of the capacitor plate material operable as the ground plate of the memory cell capacitor (claim 45).

None of the references of record teaches or suggests the claimed method of forming a capacitor under bitline DRAM memory cell comprising (in addition to the other limitations in the claim) forming within the first insulating layer a ground plate contact pillar composed of the contact conductive material extending through the first insulating layer and contacting a ground plane region of the memory cell capacitor; forming a trench in the first insulating layer extending down toward the substrate, exposing a portion of the ground plate contact pillar operable as a ground plate of the memory cell capacitor, wherein the ground plate contact pillar resides within the trench formed in the first insulating layer (claim 47).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dao Nguyen whose telephone number is (571)272-1791. The examiner can normally be reached on Monday-Friday 9:00am – 6:00pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, David Nelms can be reached on (571)272-1787. The fax numbers for all communication(s) is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-1625.

David Nelms
Supervisory Patent Examiner
Technology Center 2800

Dao H. Nguyen
Art Unit 2818
July 9, 2004